March ##, 2001

Mr. Richard Sprott
Director
Division of Air Quality
Department of Environmental Quality
P.O. Box 144820
Salt Lake City, UT 84114-4820

Dear Mr Sprott,

**NOTICE OF INTENT: Modification of Source**

Intermountain Power Service Corporation (IPSC) is hereby submitting a Notice of Intent (NOI) to increase generating capacity at the Intermountain Generating Station (IGS) in Delta. The IGS is a coal fired steam-electric plant located in Millard County. Specifically, IPSC intends to construct modifications to Units One and Two at IGS to enhance performance and reliability, and to allow increased capacity by de-bottlenecking certain aspects of our operation. This NOI requests an approval order to construct and Title V permit changes to operate accordingly.

As required by Utah Administrative Code R307-401-2, the following information is provided:

(1) **PROCESS DESCRIPTION:** IGS is a fossil-fuel fired steam-electric generating station that primarily uses coal as fuel for the production of steam to generate electricity. Both bituminous and subbituminous coals are utilized. Fuel oil and used oil are also combusted for light off and energy recovery.

IGS is a two unit facility operating at a rated capacity of 875 megawatts (MW) per unit (gross). Approximately 5.3 million tons of coal and 600,000 gallons of oil are used each year in the production of electricity. Boiler capacity is rated at 6.2 million pounds per hour of steam flow at 2822 psi.

IGS has in place bulk handling equipment for the unloading, transfer, storage, preparation, and delivery of solid and liquid fuel to the boilers. No changes of this equipment are required nor expected. No changes in the usage of other raw materials or bulk chemicals are required nor expected.

**PROPOSED CHANGES:** IPSC is planning to enhance steam flow characteristics through the high pressure (HP) section of each turbine used to generate electricity. This involves the replacement of the HP blade section with a modified design that improves performance and reliability. This modification in and of itself will not increase plant capacity, but instead can lower emissions due to decreased fuel use from the resulting increased performance.

Combined improvements to other areas of the plant will help in realizing increased

plant generating capacity. These modifications will result in "de-bottlenecking" critical points that presently prevent the full utilization of present equipment. Other changes are needed specifically for reliability, performance and/or routine maintenance needs. Changes include:

- Upgrading turbine performance with dense pack design,
- Modifying cooling towers to enhance cooling properties for recapturing "dead" steam,
- Adding steam pressure safety valves to both main steam and cold reheat steam lines,
- Enhancing cooling of generator windings,
- Enhancing cooling of main step-up and isophase transformers,
- Providing equalization of bus loading,
- Modifying induced draft fan ducts,
- Adding performance upgrades to boiler feed pumps,
- Improving boiler and turbine control system logic software,
- Improving removal capacity in flue gas desulfurization scrubbers, and
- Upgrade low NOx burners from dual stage to new technology three stage.

Capitalization of these changes to both units is expected to be about $35 million.

PRODUCTION SUMMARY: The proposed project will increase generation capacity from 875 to 930 MWhe, with steam flow design increasing from 6.2 to 6.9 million pounds per hour. Design heat input will increase from 8,352 to 9,225 million BTU per hour, requiring the use of 5.6 million tons of coal each year. See technical specifications for details.

(2) **EMISSION CHARACTERISTICS:** The expected composition and physical characteristics of emissions resulting from the proposed modifications are expected to change as indicated in the attached spreadsheet from present emission composition and characteristics with regard to emission rates, temperature, air contaminant types, and concentration of air contaminants. The mass flow of chimney effluent may change proportionately with the fuel usage and combustion air to meet comparable heat input. The pollution control devices (PCD) include low-NOx burners, fabric

filters and wet scrubbers.

The following emission rate parameters are provided as required:

| Parameter | Current Before PCD | Proposed Before PCD | Current After PCD | Result after modifications |
|---|---|---|---|---|
| Particulates | 96,000 lbs/hr | | 50 lbs/hr | |
| Nitrogen Oxides | 0.42 lbs/hr* | | 0.42 lbs/hr | 0.40 lbs/hr |
| Sulfur Dioxide | 1.8 lbs/hr | | 0.06 lbs/hr | none |
| Temperature | 325 F | | 120 F | none |
| Stack Gas Volume | 130,000,000 scfh | | 130,000,000 scfh | none |
| Hydrochloric Acid | 0.67 lbs/hr | | 0.02 lbs/hr | none |
| Hydrofluoric Acid | 0.14 lbs/hr | | 0.004 lbs/hr | none |
| Antimony | 0.007 lbs/hr | | 0.000008 lbs/hr | none |
| Arsenic | 0.03 lbs/hr | | 0.00006 lbs/hr | none |
| Beryllium | 0.0009 lbs/hr | | 0.0000005 lbs/hr | none |
| Cadmium | 0.001 lbs/hr | | 0.00001 lbs/hr | none |
| Chromium | 0.06 lbs/hr | | 0.0001 lbs/hr | none |
| Cobalt | 0.006 lbs/hr | | 0.00001 lbs/hr | none |
| Lead | 0.013 lbs/hr | | 0.00003 lbs/hr | none |
| Manganese | 0.016 lbs/hr | | 0.00005 lbs/hr | none |
| Mercury | 0.0001 lbs/hr | | 0.00001 lbs/hr | none |
| Nickel | 0.009 lbs/hr | | 0.00005 lbs/hr | none |
| Selenium | 0.005 lbs/hr | | 0.00065 lbs/hr | none |

*NOTE: NOx emissions are estimated AFTER lowNOx combustion.

(3) **PCD DESCRIPTION:** Present pollution control device equipment for combustion include dual register low NOx burners, baghouse type fabric filters for particulate removal, and flue gas desulfurization scrubbers. The low NOx burners provide a nominal 60% reduction in potential combustion NOx concentration, the baghouse filters operate at nominal 99.95% efficiency, and the wet scrubbers operate at nominal 90% efficiency. Control equipment for the handling and transfer of solid material include dust collection filters.

**PCD Upgrades:** This project includes modifications to flue gas flow through scrubber modules to enhance removal rates. Also, the project includes replacement of dual register low NOx burners with new technology triple register low NOx burners.

(4) **EMISSION POINT:** The present emission point for the IGS boilers is a lined chimney that discharges at 712 feet above ground level (5386 feet above sea level). The chimney location is 39° 39' 39" longitude, 112° 34' 46" latitude.

(5) **SAMPLING/MONITORING:** Emissions from boiler combustion are continuously sampled and monitored at the chimney for nitrogen oxides, sulfur oxides, carbon dioxide, and volumetric flow. Opacity is measured at the fabric filter outlet. Other parameters recorded include heat input and production level (megawatt load). Monitoring will remain unchanged. Other emissions not directly monitored are calculated using engineering judgements, emission factors, and fuel analyses.

(6) **OPERATING SCHEDULE:** Operation at IGS is 24 hours per day, seven days per week. This will not change.

(7) **CONSTRUCTION SCHEDULE:** Construction of these modifications will be performed in a staged manner, generally following this schedule:

Spring 2002: Unit Two HP Dense Pack installation (no net significant increases).

Spring 2003: Unit One HP Dense Pack installation (no net significant increases).

Spring 2004:

Spring 2005:

Spring 2006:

(8) **MODIFICATION SPECIFICATIONS:** Detailed engineering specifications and project descriptions will be forwarded under separate cover.

(9) **ADDITIONAL INFORMATION:** IGS operates under a Title V permit (#2700010001). IPSC intends to continue to operate in full compliance with that permit and applicable requirements. No deviations from permit conditions are expected.

## Operating Flexibility

IPSC reserves the right to cancel any and all planned modifications prior to the issuance of an approval order. IPSC may scale construction back to installation of turbine dense packs only. We believe that the installation of the HP Dense Pack project alone would not require a PSD new source review. Note that the EPA has previously determined that enhancements like the Dense Pack project are not major modifications. (See detailed analysis and determination provided by Region 5 specific to a dense pack project, from Francis X. Lyons, Regional Administrator, to Henry Nickel of Hunton & Williams, dated 5/23/00.) If IPSC decides to install only the Dense Pack enhancements and certain upgrades for reliability, we will provide the supporting information to show that there would be no significant net increase in emissions.

## Phased Permitting

Due to the time length and intermittent construction schedule of the proposed modifications, IPSC is requesting through this NOI that the DAQ issue an approval order with terms that coincide with the phases of installation. For instance, due to lead time for engineering and budgeting requirements, some portions of this project affecting capacity and/or emissions may be installed prior to upgrades in pollution control equipment. IPSC is receptive to an AO that requires temporary emission limits to ensure enforceability under PSD and other regulations during the period prior to project completion and final upgrades to control equipment. Such terms would be no different than sunset provisions written for new sources.

## Permit "Off Ramps"

The proposed project is not being fully budgeted up-front. Budgeting will be approved on a year-by-year fiscal basis. Although the current business climate for increased capacity is very favorable for this project, outlooks do change. Accordingly, IPSC proposes that in conjunction with the previous discussion on phased permitting, the DAQ add language to the AO that permanently imposes limits to ensure PSD enforceability under certain conditions. Specifically, if IPSC fails to budget full completion of this project, whereby the appropriate pollution control equipment is not upgraded, the DAQ and IPSC can be assured that PSD will still be met for a minor modification.

It may be possible that once IPSC has begun installation of certain segments of the project that can impact emissions, budgeting may be terminated. IPSC needs assurances, by way of "off-ramp" language in the AO, that we would not be forced to proceed with project completion. Appropriate permit limits that kick in if pollution controls are not upgraded as scheduled is one way to accomplish this request.

## Applicability Determinations

**New Source Performance Standards.** IGS operates as a New Source Performance Standard (NSPS) power plant, regulated under Title 40 of the Code of Federal Regulations, Part 60, Subpart Da. A regulatory review of 40 CFR 60(Da) finds that the proposed changes do not fall

under NSPS applicability as a modification. A modification is defined at 40 CFR 60.14 ,which covers 40CFR60(Da), to include any change in operation of a source that increases the maximum hourly emissions of a Part 60 regulated pollutant above the maximum achievable during the previous five years. (See 40 CFR 60.14(h): "No physical change, or change in the method of operation, at an existing electric utility steam generating unit shall be treated as a modification for the purposes of this section provided that such change does not increase the maximum hourly emissions of any pollutant regulated under this section above the maximum hourly emissions achievable at that unit during the 5 years prior to the change."). Based upon EPA interpretation and guidance, the "maximum hourly emissions achievable" at IGS are considered to be those emission limits presently in place via our Title V permit. For example, the present NSPS limit for NOx is 0.50 lbs/Mbtu of heat input. At a rated capacity of 8,352 million BTU per hour, this translates to a maximum achievable emission rate of 4176 pounds per hour. Since we have not, and will not exceed this level, the maximum hourly emissions achievable can not increase. Therefore, NSPS does not apply to the changes proposed here.

**Prevention of Significant Deterioration.** Our intent is to keep this project as a minor modification so as not to impact incremental consumption of Utah's airshed. This project is being designed and constructed with an eye toward PSD issues. Planned upgrades to present pollution control equipment as part of this proposed modification will negate any emission increases causal to the project. Accordingly, this modification will not have a net significant increase which would trigger a major new source review. Enforceable language and emission limits in the final AO that keep the proposed modifications minor in nature will also ensure meeting PSD. IPSC can meet with your office staff to provide the calculations and operating data.

Should you require further information to expedite the approval of this request, please contact Mr. Dennis Killian, Superintendent of Technical Services, at (435) 864-4414, or dennis-k@ipsc.com .

In as much as this notice of intent affects our Title V Operating Permit, I hereby certify that, based on information and belief formed after reasonable inquiry, the statements and information in this document are true, accurate, and complete.

Cordially,

S. Gale Chapman
President, Chief Operations Officer, and Title V Responsible Official

cc: Blaine Ipson, IPSC
Bruce Moore, LADWP CES
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